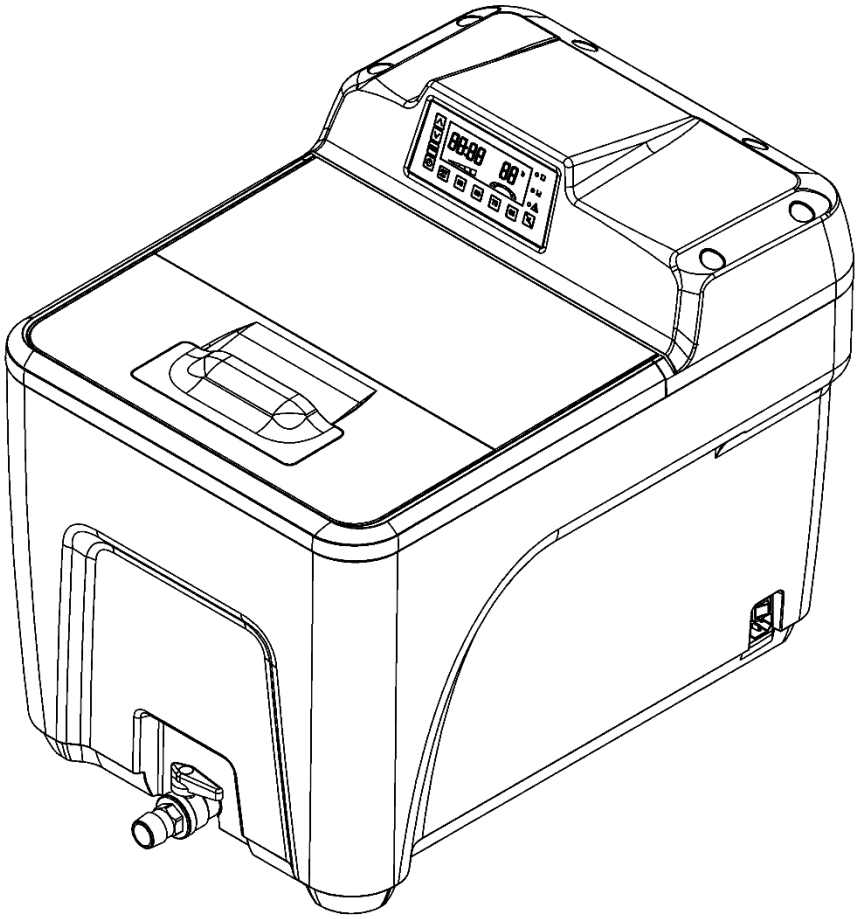
SCA 1200 HT



User Manual

August 1, 2016

Phoenix Analysis & Design Technologies, Inc. (PADT, Inc.)

TEL : 1-800-293-PADT FAX : 480-813-4807

sca@padtinc.com

www.SupportRemoval.com

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Table of Contents

1: Site Preparation

1.1: Locating the Unit

- Place the SCA on a sturdy horizontal surface or cart capable of supporting 200 lbs (the weight when filled with water).
- Ensure there is no Aluminum or Zinc in the area where the SCA will be used. THE CLEANING SOLUTION CONTAINS SODIUM HYDROXIDE AND REACTS VIOLENTLY WITH ALUMINUM OR ZINC.
- The selected location should be isolated from unintentional contact from those working in the area.
- It should be near a grounded wall outlet such that the power cord does not pose a hazard to people or equipment passing by.
- The power cord plug-in receptacle is a disconnecting device that should be easily accessible at all times. Position the unit so that it can be easily reached.
- It is strongly recommended that the unit be placed on a circuit with its own breaker with a GFCI.
- Place the unit in a well-ventilated area.

1.2: Preparations for Draining and Disposal

- Placing the unit near a drain or sink will make draining the unit much easier. Alternatively, the SCA can be kept on a cart for easy transport to a sink or drain.
- Use a 1” inner diameter hose made of PVC or equivalent on the drain tube to facilitate draining. Ensure the tubing or hose can withstand the temperature and caustic properties of the cleaning solution.

Used solution must be disposed of under applicable local waste disposal regulations. **It is the responsibility of the user to determine and verify what the local disposal regulations are and to follow those regulations.**

2: Important Safeguards

These notes are intended to draw your attention to risks which only you can recognize and avoid or overcome. They are intended to enhance your own safety consciousness.

THE CORRECT UNIT USAGE AND PROPER HANDLING IS SOLELY THE USER'S RESPONSIBILITY.

ELECTRICAL PROTECTION WILL BE IMPAIRED IF USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER.

Failure to follow these safeguards and/or common sense may result in significant personal injury and will void the warranty.

The WaterWorks solution that may be added to the unit to aid in support removal contains Sodium Hydroxide. Please read and remember the following safety information about this material:

DANGER: WaterWorks SOLUTE CONTAINS SODIUM HYDROXIDE WHICH CAN CAUSE SEVERE BURNS TO EYES, SKIN AND RESPIRATORY TRACT.

Do not get in eyes, on skin or on clothing. Do not swallow or inhale powder. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

First Aid:

In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

NFPA Rating:	Health	H=3
	Flammability	F=0
	Reactivity	R=1

3: Safety Warnings

READ ALL INSTRUCTIONS BEFORE OPERATING

WHAT TO DO	WHAT NOT TO DO
▪ Always wear thermal gloves and safety glasses when working near the unit or when touching any part of the unit. ▪ Always keep this manual near the unit. ▪ Always place unit on a flat, stable surface. ▪ Always wipe away any cleaning solution spilled near the control panel. ▪ Always locate the unit away from locations where it might be bumped. ▪ Always unplug the unit from the wall when not in regular use. ▪ Always use the power cord supplied by the manufacturer. ▪ Always make sure that the power plug receptacle is easily accessible. ▪ Always unplug the unit from the wall when it is being cleaned, moved or serviced in any way. ▪ Always connect the device to a power receptacle with a protective ground. ▪ Always change the cleaning solution as recommended in this manual. ▪ Always clean the unit with mild soap and a sponge or rag. Rinse tank completely before refilling. ▪ Always stand upright with your head away from the tank when opening the lid to avoid vapors. ▪ Always remove some liquid from the tank before adding large parts to avoid overflow. ▪ Always operate the unit in a well-ventilated location. ▪ Always operate within environmental temperature range of 10 to 30 degree C.	▪ Do not use the SCA for any purpose other than removing Soluble Support Technology (SST) material from parts created on Stratasys 3D Printers. ▪ Do not allow aluminum, zinc or acids to come into contact with the WaterWorks cleaning solution. WaterWorks cleaning solution contains Sodium Hydroxide. ▪ Do not use any liquid other than water and Stratasys cleaning solution products in the unit. ▪ Do not add more than the recommended amount of cleaning solution to the unit. ▪ Do not overfill the unit. ▪ Do not allow the fluid temperature to exceed 85ºC (185ºF). ▪ Do not clean the unit with solvents. ▪ Do not immerse the unit in liquid of any kind. ▪ Do not operate the device if there are *any* doubts regarding safe operation due to the outer appearance (e.g. damages) of the system or the operating environment. ▪ Do not operate the unit until you have read this manual and understand all aspects of the unit's operation. ▪ Do not move the unit until you are certain that it is cool and all liquid has been drained from the unit. ▪ Do not operate the unit unless the water level is above the low liquid level indicator mark. ▪ Do not operate the unit dry.

4: Warranty Information

WARRANTY CERTIFICATE

Covering PADT, Inc. Support Cleaning Apparatus

Effective January 1, 2009

One Year Limited Warranty Coverage

All new Support Cleaning Apparatus (SCA) systems are warranted exclusively by PADT, Inc.'s ("Manufacturer") limited warranty as follows:

Each Support Cleaning Apparatus system ("System") and its components ("Components"), except those listed below under limits and exclusions, is warranted against defects in the materials and workmanship for a period of one (1) year from the date of installation at the end user's ("Customer") facility.

Repair or replacement only: manufacturer's liability under this agreement shall be limited to repairing or replacing, at the discretion of manufacturer, parts, or components sufficient to return the system to conform to the marketing specifications of the system.

Components subject to wear during normal use and over time such as paint, finish, light bulbs, seals, etc., are excluded from this warranty.

This warranty is void if the system is subjected to mishandling, misuse, neglect, accident, improper installation, improper maintenance, or improper operation or application, or if the machine was improperly repaired or serviced by the customer. This warranty is void if the system is not installed by a certified distributor and the proper installation documentation provided by the manufacturer has not been submitted.

Liability, whether based on warranty, negligence or other cause, arising out of and/or incidental to sale, use or operation of the system, or any part thereof, shall not in any case exceed the cost of repair or replacement of the defective equipment, and such repair or replacement shall be the exclusive remedy of the purchaser, and in no case will manufacturer be responsible for any and/or all consequential or incidental damages including without limitation, and/or all consequential damages arising out of commercial losses.

This warranty is transferrable from the original end user to another party if the machine is sold via private sale before the end of the warranty period.

The foregoing is a limited warranty and it is the only warranty by manufacturer. MANUFACTURER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

5: Declaration of Conformity, Regulatory Information

Declaration of Conformity

Manufacturer	Phoenix Analysis & Design Technologies, Inc. 7755 S Research Dr, Suite 110 Tempe, AZ 85284, USA
Type of Equipment	Electrical Equipment for Measurement, Control and Laboratory Use (Support Cleaning Apparatus)
Model Number(s)	SCA-1200ES and SCA-1200HT

We declare under our sole responsibility that the devices mentioned above comply with the following EU Directives:

Low Voltage	2014/35/EU
Electromagnetic Compatibility (EMC)	2004/108/EC
Waste Electrical and Electronic Equipment (WEEE)	2012/19/EU
Restriction of Hazardous Substances (RoHS)	2011/65/EU

Common Technical Specifications Used for Demonstration of Compliance:

EN61010-1:2010 / CAN/CSA-C22.2 No. 61010-1:2012 / UL 61010-1:2012;
EN61010-2-010:2014 / CAN/CSA-C22.2 No. 61010-2-010:2015 / UL 61010-2-010:2015;
EN61326-1:2013

Design and Technical Construction File Maintained at:	Hui Yang Zing Ear Industry Co., Ltd. No. 258, 6th Zhongkai Road, Chenjiang, Huizhou City, Guangdong Province, China.
Name of Authorized Signatory	Eric Miller
Position Held in Company	Director
Signature	

7755 S Research Dr, Suite 110, Tempe, AZ 85284 • www.PADTINC.com • 480.813.4884 V • 480.813.4807 F

ZERTIFIKAT • CERTIFICATE • 認証書 • СЕРТИФИКАТ • CERTIFICADO • CERTIFICAT

America

CERTIFICATE

No. U8 15 08 69199 008

Holder of Certificate: **Phoenix Analysis & Design Technologies, Inc.**
7755 S. Research Dr., Suite 110
Tempe AZ 85284
USA

Production Facility(ies): 87062

Certification Mark:

C US

Product: **Electrical equ. for measurement, control and laboratory use (Support Cleaning Apparatus)**

Model(s): **SCA-1200ES, SCA-1200HT**

Parameters:
Rated Input : 100-120/220-240VAC, 50/60Hz, 12/9A
Degree of Protection : IP20

Tested according to:
EN 61010-2-010:2014 supplemented by
UL 61010-2-010:2015
UL 61010-1:2012
CAN/CSA-C22.2 No. 61010-2-010:2015
CAN/CSA-C22.2 No. 61010-1:2012

The product was voluntarily tested according to the relevant safety requirements noted above. It can be marked with the certification mark above. The mark must not be altered in anyway. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC Guide 67. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited certification body.

Test report no.: 682401301502

Date, 2015-09-01

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TÜV SÜD AMERICA INC. • 10 Centennial Drive • Peabody MA 01960 USA • www.TUVamerica.com

6: Understanding your SCA

The Support Cleaning Apparatus (SCA) is a device specifically developed to provide robust and efficient removal of support material from parts created with 3D printers from Stratasys, Inc. that utilize their Soluble Support Technology (SST). This is an improved model based on the feedback received from SCA users in the Stratasys 3D Printer community. The original SCA system was developed with input from Stratasys, users and distributors of SST based systems.

6.1: How it Works

The system removes support material by immersing parts created with Stratasys' SST material in a warm bath of water with a specific amount of cleaning solution added (see operating instructions). The SCA heats the water and circulates the heated water around the parts in the tank. The hot solution dissolves the support material without harming the underlying model material. Over time, depending on geometry and the amount of support material, all the support material is dissolved and the part is ready to be rinsed, dried and used for its intended purpose.

6.2: Key Components

The SCA consists of several key components that all users should be familiar with. Understanding the function of each component is important for the safe operation of the system, and will aid in extending the life of your SCA.

Many aspects of the SCA have been designed specifically for safety. All electrical components are properly grounded and labeled for safety protection.

6.2.1: Control Panel

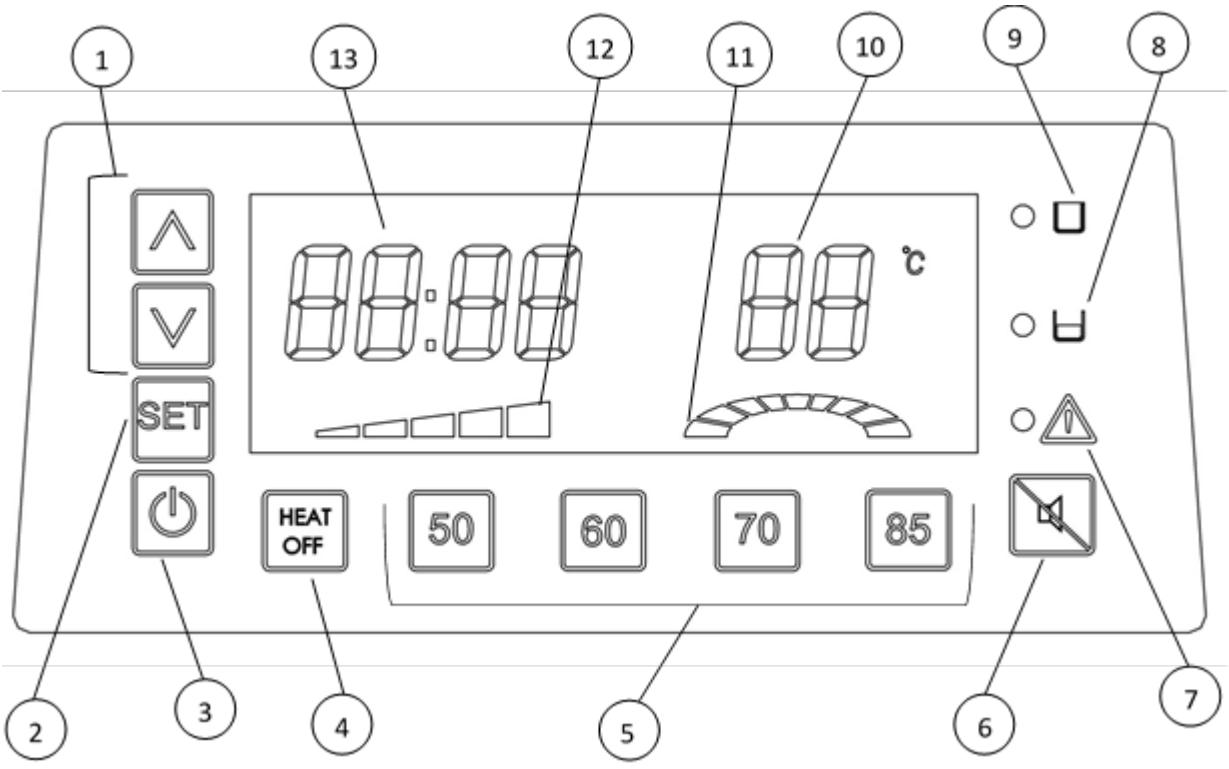


Figure 1: Control Panel

1 Up/Down arrows (Add/Subtract time)

2 Set timer

3 Start/Pause

4 No heat selection

5 Temperature selection

6 Silence alarm

7 Alert indicator

8 Low water indicator

9 High water indicator

10 Temperature LED display

11 Pump operating LEDs

12 Progress LEDs

13 Time remaining LED display

6.2.2: Tank Area

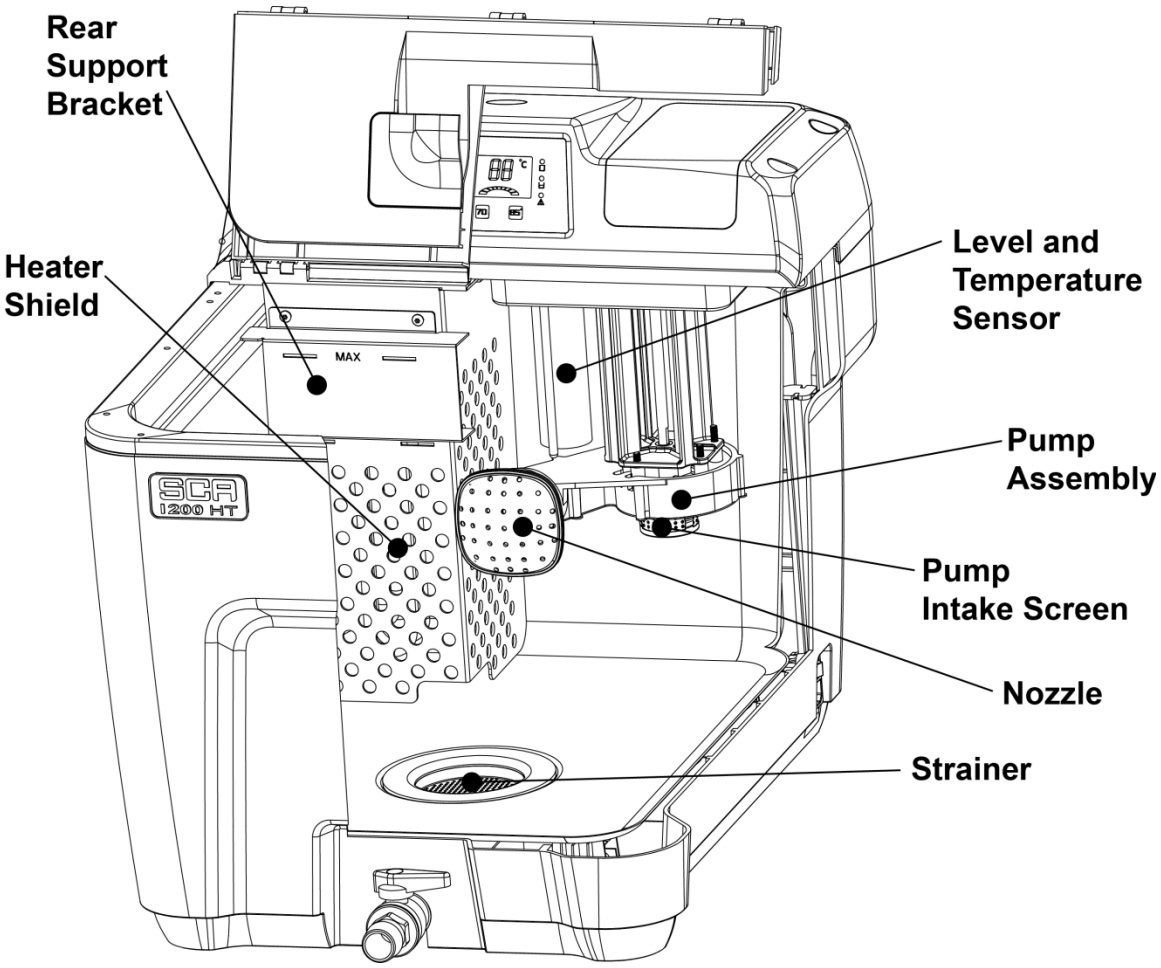


Figure 2: Tank Area

The tank area is used to hold the liquid and it is where the parts are cleaned. The SCA improves part cleaning by circulating the liquid in the tank.

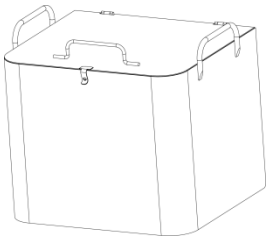


Figure 3: Large Parts Basket

The Large Parts Basket is used to hold parts during cleaning and to lift parts out of the tank. Users should wear thermal gloves when lifting the basket from the tank.

Figure 4: Small Parts Basket

The Small Parts Basket is used to hold small parts during cleaning.

The Strainer over the drain opening in the tank prevents debris from entering the drain when the tank is emptied. It should be rinsed after emptying the tank before refilling with fresh liquid.

The Heater is located behind the perforated Heater Shield. It heats the water in the tank.

The Spray Nozzle directs the flow of liquid into the tank. The spray nozzle can be removed for cleaning if the holes are clogged. Simply unscrew the nozzle and rinse with tap water to un-clog holes.

The Pump Intake Screen prevents large particulates from entering the pump. It may occasionally need to be cleaned with a soft brush or toothbrush to remove debris trapped in the holes.

The Temperature and Level sensors are used to sense the temperature and height of the liquid in the tank. They are mounted behind the rear support bracket.

6.2.3: Unit Side Area

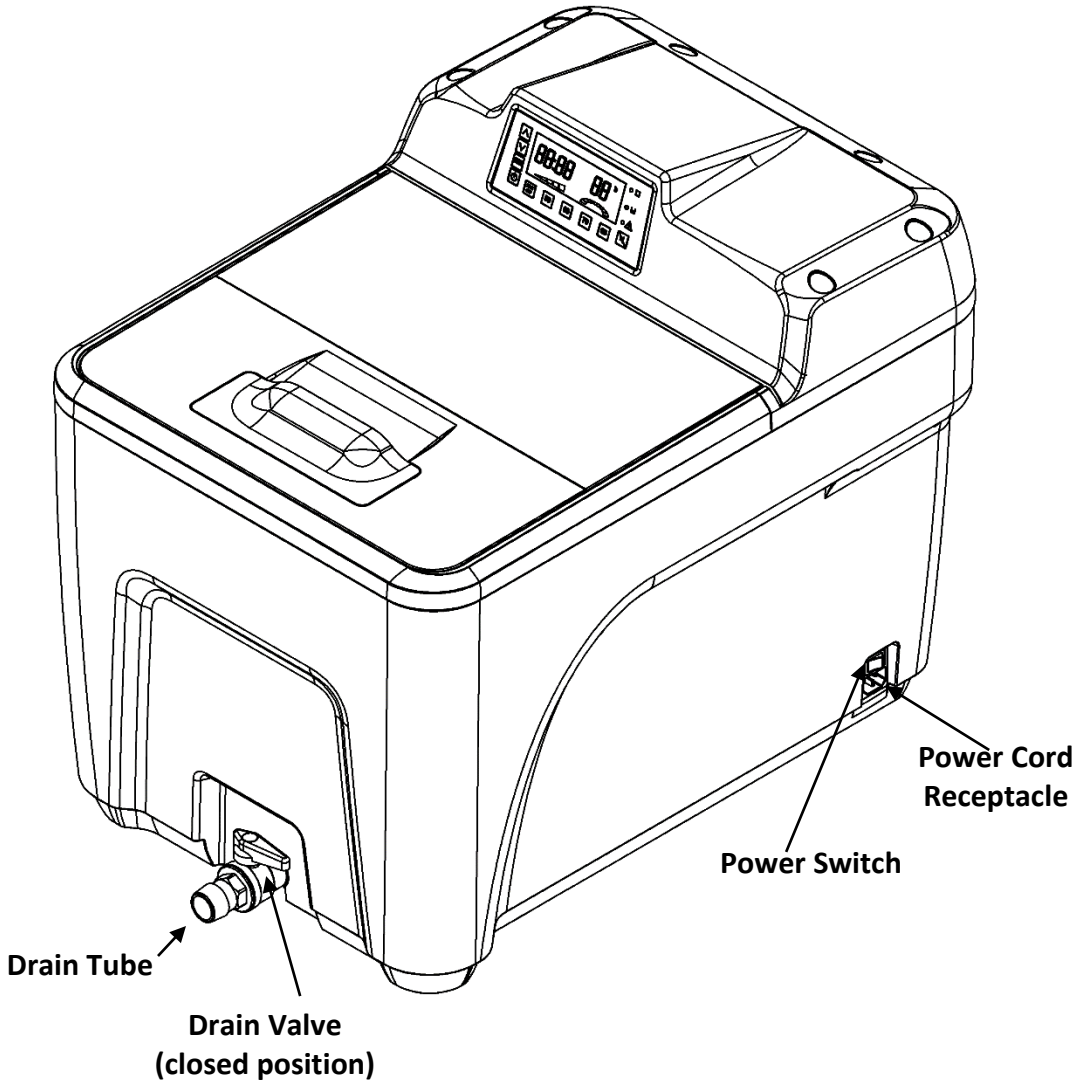


Figure 5: Front and Side views

The Main Power Switch is located on the right-hand side of the unit. This turns power to the unit on and off.

The Power Cord (not shown in figure) is used to connect the system to a wall outlet for power. Only use a power cord provided by the manufacturer.

The Power Cord Receptacle is where the power cord is connected to the unit. The plug is a disconnecting device and should be easily accessible at all times.

6.2.4: Front Area

The Drain Tube and Drain Valve are on the front of the tank for easy accessibility.

The tank is drained by connecting a hose to the Drain Tube and turning the Drain Valve to the open position. The liquid in the tank should be at room temperature and the unit should be turned off and unplugged from the wall before it is drained.

6.3: Labels

The SCA includes labels that impart important product and safety information. Users should take the time to familiarize themselves with each label and its meaning.

6.3.1: Product Identification Tag

The Product Identification tag is located on the back of the unit. It contains key support information for the SCA including Model Number, Part Number, Serial Number and contact information for support. It should never be tampered with or removed.

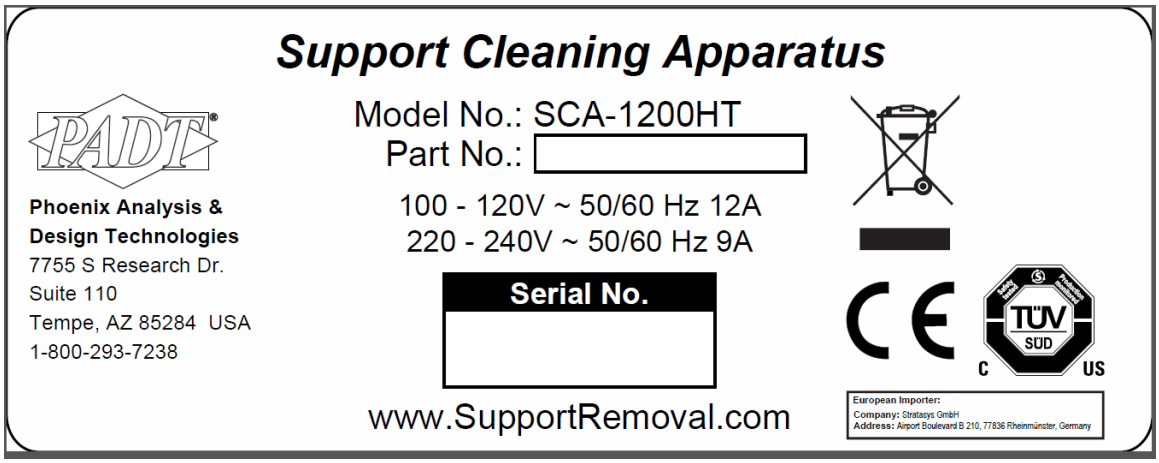


Figure 6: Product Identification Tag

6.3.2: Warning Labels

Hot Surface,
Do Not Touch
GB/T 5465.2-5041

General Warning

ISO 7000

Danger Electricity

6.4: Assembly Drawing

Figure 7 shows the entire SCA assembly. Table 1 lists the replaceable components in the system. Please consult this information when calling for support or ordering replacement parts.

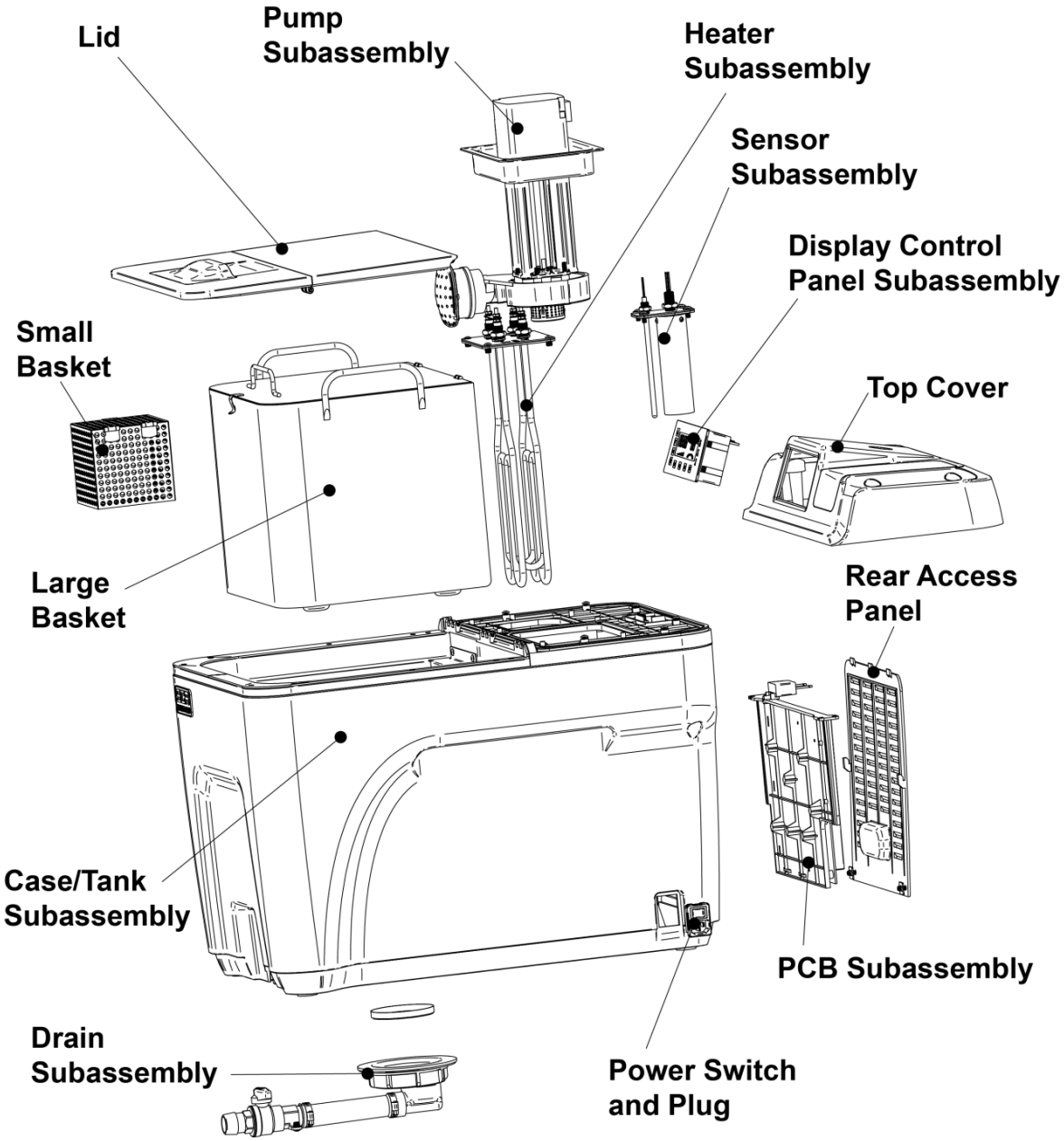


Figure 7: SCA Assembly

Table 1: List of Replaceable Components

Large basket
Small parts basket
Pump subassembly w/nozzle
Heater subassembly
Sensor subassembly
Display Control Panel
PCB subassembly
Power switch
Spray nozzle

7: Unpacking, Inspecting and Installing your SCA

THE SCA SHOULD BE INSTALLED BY AN AUTHORIZED DISTRIBUTOR ONLY. INSTALLATION BY THE USER MAY VOID THE WARRANTY.

Before removing your SCA from its packaging, completely read this manual. Follow all safety recommendations while unpacking, installing and operating the system.

7.1: Package Contents

The SCA is shipped with the following contents:

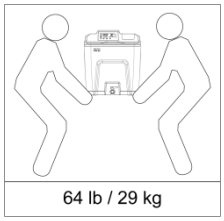
SCA System (1)
Large Part Basket (1)
Small Part Basket (1)
Quick Reference Card (1)

Power Cords:
110V North America std.
220V Europe std.
User's Manual & Warranty (1)

If any parts are missing you should contact customer support immediately.

7.2: Unpacking

Place the package on a stable horizontal surface and check inside for the items listed above. Some items may be stored inside the tank for shipping. Remove everything from the SCA unit itself before lifting the SCA from the shipping container.



Unit weight is approximately 64 lb/29 kg. Two or more people should lift the unit out of the packaging and place it on a table or cart.

7.3: Inspecting Unit

Carefully inspect the unit for damage during shipping. If any damage is found DO NOT ATTEMPT TO OPERATE THE UNIT. Contact technical support immediately for assistance.

7.4: Installation

1. Place the Large Part Basket into the tank after ensuring all packing material has been removed.
2. Close the lid over the tank.
3. Attach the power cord to the system and then to a grounded wall socket. Only use a power cord provided by the manufacturer.
4. Press the ON/OFF Power Switch and check to make sure that the display control panel lights up.
5. Turn the unit off.
6. Make sure the drain valve is in the closed position. Remove the blue plastic cap from the drain tube before use.
7. Complete the online registration form at www.SupportRemoval.com.

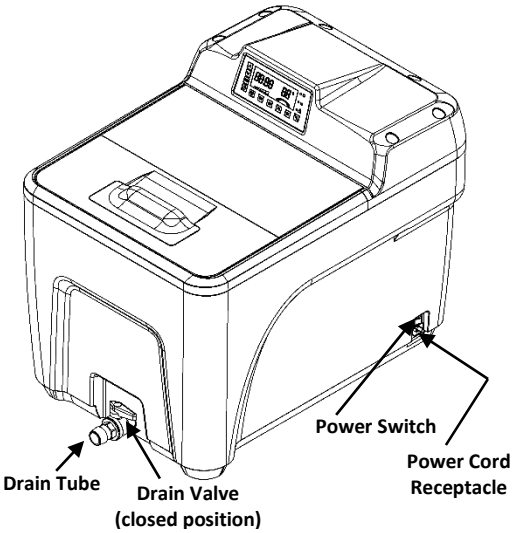


Figure 8: Power Switch and Plug Locations

8: Operating Your SCA

Although the SCA is simple to operate, it is critical that all users follow the instructions in this manual and adhere to all safety guidelines.

8.1: Fill the Unit with Water

Make sure that the strainer is clean. Make sure that the drain valve is in the closed position.

Fill the tank up almost to the MAX slot on the rear support bracket. If you plan on running large parts, it is advisable to fill to a lower level (but above the Minimum level) to make room for the parts and basket. DO NOT use hot water. The addition of WaterWorks to water is a heat-releasing reaction and if added to HOT water will result in dangerous spattering.

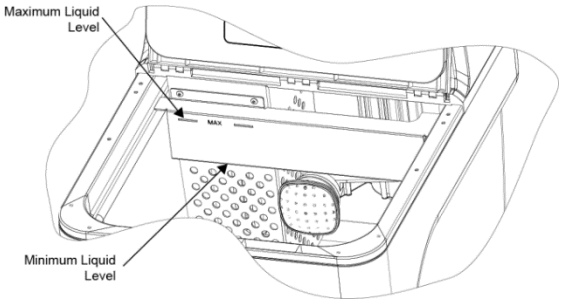


Figure 9: Fill Unit to MAX line

Never operate the tank unless the liquid level is above the liquid level MIN slot on the heat shield. This is just below the bottom edge of the rear support bracket.

8.2: Add Cleaning Concentrate to the Tank

Users have two approved options for cleaning concentrate: either WaterWorks or Ecoworks, both available from your local Stratasys reseller. The WaterWorks soluble concentrate contains Sodium Hydroxide and care must be taken when working with the solution and when disposing of it. Refer to section on Maintaining your SCA for disposal instructions. The Ecoworks cleaning agent is both user- and eco- friendly. The WaterWorks concentrate will generally remove support material in less time than the Ecoworks. However, no personal protection equipment is required when handling the Ecoworks concentrate and only dilution is required when disposing of the used solution.

If Using WaterWorks Soluble Concentrate:

Wearing protective gloves and proper eye protection, carefully and slowly add one bottle (950 grams) of WaterWorks Soluble Concentrate P400SC into the filled tank. Never add concentrate to a tank without water. Optimal pH for the cleaning solution using WaterWorks is 12.6, and the solution begins to lose effectiveness below 11.5pH. Using litmus paper on a room temperature sample of the solution is sufficiently accurate to determine the pH.

If Using Ecoworks Cleaning Agent:

Carefully remove the entire contents of six packages (foil bags) and gently drop them into the water in the tank. Make sure to use both sides A and B. Never place the cleaning agent in a tank without water.

Note: As the parts are cleaned the cleaning solution becomes saturated with the support material and loses its effectiveness. Refer to the Troubleshooting section for further information about determining when the solution requires replacement.

8.3: Preheating and Starting the Cleaning Cycle

Recommended Temperature Settings for Dissolving Soluble Support from 3D Printed Parts			
Build Material	**Temperature Setting**	**WaterWorks**	**EcoWorks**
ABS	70°C	Yes	Yes
PC	85°C	Yes	No
Nylon	50, 60 or 70°C**	Yes	Yes
**depending on part wall thickness and desired dimensional accuracy.			
For Polyjet parts select the 'HEAT OFF' option.			

Connect the power cord to the side of the unit then to a suitable grounded wall socket.

The unit is compatible with both North America 110V~50/60Hz and International 220V~50/60HZ power. The unit ships with both power cords. Only use a power cord provided by the manufacturer.

It is strongly recommended that the unit be placed on a circuit with its own breaker with a GFCI. The power circuit must be grounded.

Press the ON/OFF rocker switch. The display control panel should be on.

Press one of the four temperature preset buttons or the Heat Off button to select the cleaning temperature. The temperature can be changed at any time during the cycle by selecting a different temperature button. If heating the water from room temperature to 70°C, it takes about 2 hours to reach temperature.

Press the SET button and then press the up and down arrows to set the minutes. Press the SET button again and use the up and down arrows to set the hours. Press the SET button again to accept the time. Press the ⏻ button to start the heater and pump.

8.4: Loading Parts and Testing Level Sensors

Wait until the SCA has reached the desired temperature before loading parts into the tank. This minimizes the time the parts are immersed in the cleaning solution.

Open the lid on the large parts basket and place the parts inside.

For smaller parts, open the spring-latched door of the smaller, square basket, place the part(s) inside and place small basket inside larger basket.

Before placing the basket into the cleaning solution, press the ⏻ button to pause the heater and pump. With the basket cutout facing the nozzle, slowly lower the large parts basket into the solution-filled tank. The spray nozzle should be centered on the basket cutout.

If the high level alert lights and the alarm sounds, press the  button to silence the alarm, and remove liquid by draining or scooping liquid from the tank until the alert indicator is no longer lit.

Note: It is recommended that the level sensors be tested periodically. Adding water to just above the MAX fill line should cause the high level alert to illuminate and the buzzer to sound. Draining water until the liquid level is below the MIN fill line should cause the

low level alert to illuminate and the buzzer to sound. If the level sensors are properly working the system will not operate until the liquid level is between the MIN and MAX fill lines.

Never operate the tank unless the liquid level is above the liquid level MIN slot on the heat shield. This is just below the bottom edge of the rear support bracket.

The system will not run until the liquid level is properly adjusted.

When adding or removing liquid from the tank, always remember that the tank liquid contains cleaning solution. Always use gloves and wear eye protection when adding or removing water from the tank. *Never use aluminum or zinc containers.*

⚠ Close the lids on the SCA to prevent heat loss and evaporation. Never place your face near the tank when opening the lid – vapors from the cleaning solution may cause eye and respiratory irritation.

8.5: Cleaning the Parts

To activate the cleaning cycle after setting the time and temperature, and adjusting the liquid level, press the ⏻ button. Illuminated bars will sweep under the temperature display when the pump is operating.

Parts can take a few hours or longer to clean. Cleaning time is affected by the size of the part, the amount of support material, part geometry, and the pH level of the cleaning solution.

Parts can be checked at any time during a cleaning cycle by opening the lid, carefully lifting the Large Parts Basket from the tank, turning the basket 90° and resting it on the rear support bracket and front tank ledge. Never place your face near the tank when opening the lid - vapors from the cleaning solution may cause eye and respiratory irritation.

Protective gloves and eyewear should always be worn when lifting the basket from the tank.

If the parts are clean before the end of the cleaning cycle, you can stop the cycle by pressing the ⏻ button on the display control panel.

After several cleaning cycles the cleaning solution becomes saturated with the support material and loses its effectiveness. Refer to the Troubleshooting section for further information about determining when the solution requires replacement.

8.6: Removing Parts from the Unit

Once the cleaning cycle is completed or has been stopped, the parts can be removed from the system. Open the lid, slowly lift the Large Parts Basket from the tank, turn the basket 90° and rest it on the rear support bracket and front tank ledge. Never place your face near the tank when removing the lid - vapors from the cleaning solution may cause eye and respiratory irritation.

Let the basket rest above the tank to let the liquid drain off of the parts and the basket.

The proper gloves and eyewear should always be worn when lifting the basket from the tank or handling wet parts before they are washed.

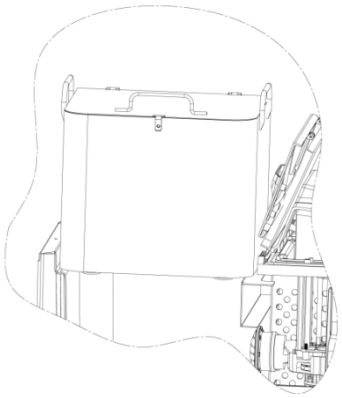


Figure 10: Rest basket on tank ledge and bracket

Remove the parts and rinse them with water to wash away any residual cleaning solution. Air dry or pat dry with a cloth or paper towels.

Lower the basket into the tank and close the lid on the tank when part removal is completed.

8.7: Readiness for the Next Cleaning Cycle

Once the cleaning cycle is completed and the parts have been removed, the system should be turned off by pressing the ON/OFF rocker switch. Alternatively, if the SCA will be used periodically use the 50°C temperature preset to maintain the water at an elevated temperature. This will shorten the time required to heat the water to the optimal cleaning temperature of 70 or 85°C.

If the system is not going to be utilized for an extended period, all liquid should be drained from the system and the power cord should be removed from the wall socket.

9: Maintaining Your SCA

As with any piece of equipment, proper maintenance is critical for safety and long life of the SCA.

9.1: Cooling the Tank Liquid

Before draining the tank, make sure that all parts have been removed from the unit. If possible, open the lid to decrease the cooling time as well. Never place your face near the tank when opening the lid - vapors from the cleaning solution may cause eye and respiratory irritation.

Leave the power on to the system to indicate the liquid temperature. Once it has reached 30ºC the tank can be drained safely.

9.2: Draining the Tank

Never drain the tank unless the fluid is at or below 30ºC.

Prior to draining, turn off power to the tank and unplug from wall socket.

Always wear protective gloves and eyewear when draining the tank.

You should drain the liquid from the tank if the unit will not be used in the near future or if the liquid needs to be changed out because the cleaning solution is saturated with support material.

Make sure that the strainer is in place at the bottom of the tank.

To drain the tank, attach a hose to the drain tube on the front of the unit. Place the other end of the hose in a sink, or a plastic or stainless steel container that will be used to transport the liquid to a drain after dilution. Secure the end of the hose in the sink or container so that it cannot come loose during draining.

Turn the drain valve to the “Open” position.

Once the tank is drained, make sure the drain valve is in the “Closed” Position.

Note: use 1” inner diameter PVC tubing or equivalent on the drain tube. Ensure the tubing or hose can withstand the temperature and caustic properties of the cleaning solution.

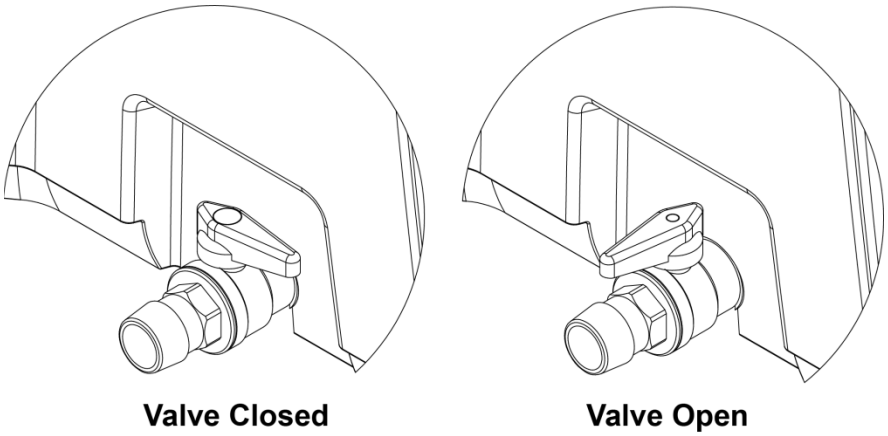


Figure 11: Drain Valve

9.3: Disposing of Solution

Used solution must be disposed of under applicable local waste disposal regulations. **It is the responsibility of the user to determine and verify what the local disposal regulations are and to follow those regulations.**

Proper disposal requires that the alkalinity (pH) of the solution be reduced to allowable levels before it is disposed of. The pH may be lowered by either diluting the solution or by neutralizing it by adding an acid. Litmus paper or an alternative method of measuring pH levels should be used to determine if the pH level is within allowable levels before disposal.

If you used the WaterWorks Soluble Concentrate, it is recommended that you dilute the solution at a ratio of 5 parts clean water to 1 part used solution. More dilution may be required, please check your local regulations.

If you are using Ecoworks cleaning agent, a dilution ratio of 1 part water to 1 part used solution is sufficient for most applications. More dilution may be required, please check your local regulations.

If you are ever unsure as to which solution was used in your SCA, assume that the WaterWorks Soluble Concentrate was used and dilute accordingly.

9.4: Inspecting and Cleaning Drain Strainer

The strainer should be cleaned every time the tank is refilled so it is clear of debris. You should never remove the strainer when the tank is full of dirty liquid. Doing so will allow debris to get into the drain tube.

The proper gloves and eyewear should always be worn when cleaning and removing the strainer. Never place your face near the tank when removing the lid - vapors from the cleaning solution may cause eye and respiratory irritation.

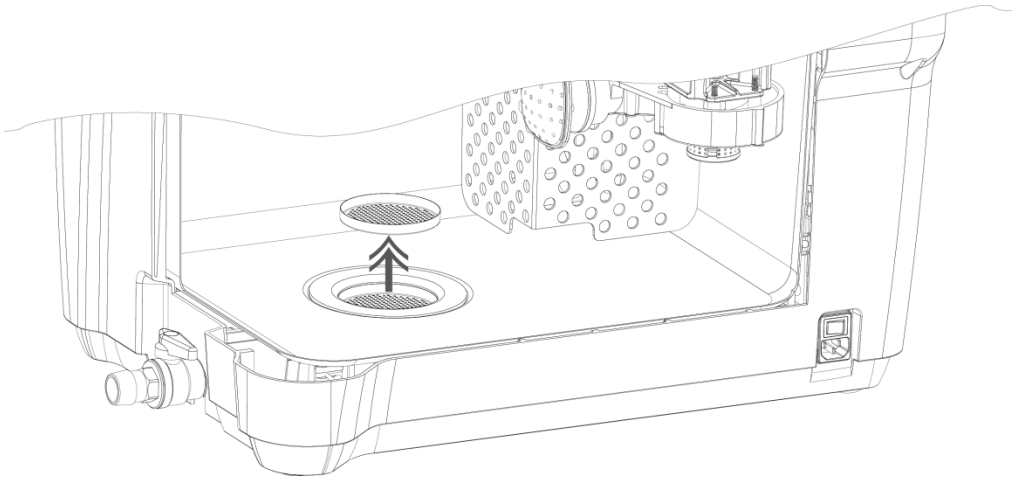


Figure 12: Strainer Removal

To remove the drain strainer, simply lift it up and out of the tank drain.

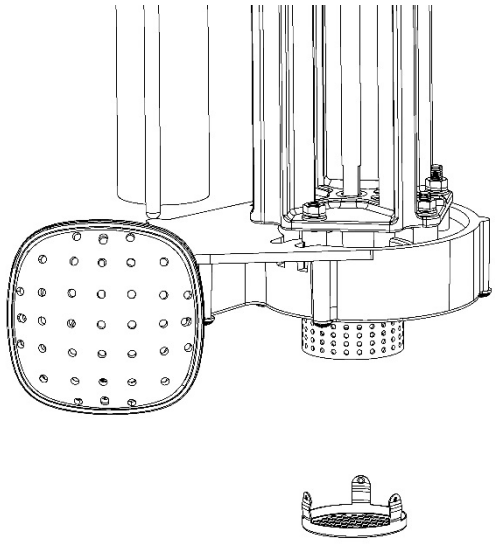
To clean debris from the strainer, scrub it with a nylon brush or a tooth brush and rinse with warm water. Make sure that all holes are unplugged.

9.5: Inspecting and cleaning the pump intake screen

The pump intake screen may become clogged with debris. This will noticeably reduce the flow in the tank.

Remove the intake screen by pulling down with sufficient force to unseat the fastening clips from the mating surface. Scrub debris from the intake screen using a stiff brush. Rinse with water. Verify all holes are unplugged before replacing the screen on the pump intake.

Figure 13 Removing pump intake screen



9.6: Refilling the Tank

Refill the tank and add cleaning solution as described in sections 9.1 and 9.2.

9.7: Cleaning

The SCA should only be cleaned with mild soap and water with a sponge or cloth. Never immerse the system or use a spray nozzle or hose to clean it. Any liquid in the electronics area of the system may damage the system and void the warranty. Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment.

9.8: Moving

Always use two people to lift the SCA. The SCA should always be drained before moving. To lift, have each person stand on either side of the unit and place their hands into the indentations under the unit. Lift the unit to a cart or wheeled table for transport.

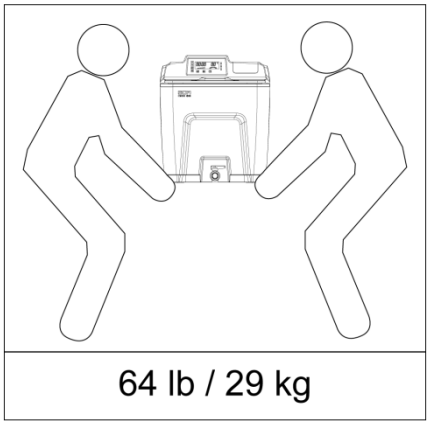
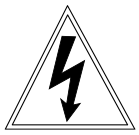


Figure 14: Lifting the Unit

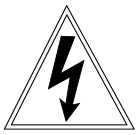
10: Troubleshooting

The SCA has been designed to allow the end user to resolve most operating problems. When a problem is encountered, please read through this troubleshooting section. If a resolution is not found, please contact technical support.



High Risk of Electrical Shock

Always disconnect the unit from power before removing the back panel!



Problem	Probable Causes	What to Do
Power Indicator ⏻ is not Lit after pressing the button	Power switch is not "On"	Press rocker switch on the right-hand side of the unit to the "On" position.
	Power cord is not connected to unit or wall	Check the power cord and make sure it is pushed all the way in to the receptacle on the system and is securely connected to a grounded wall socket.
	Fuse is blown	Contact technical support.
	Power circuit has tripped	Check your building circuit breakers, and any power strips that the unit is plugged into for a tripped circuit breaker or blown fuse. Reset or replace the breaker or fuse as required.
	Power indicator has failed	If the time and temperature displays are lit, and the rocker switch on the side of the unit is ON, the power indicator has probably failed. Contact technical support.
Pump and heater will not start	Power is not on	Check the power indicator ⏻ on the front control panel. If it is off press the ⏻ button. If still unlit, then proceed to the "Power Indicator is not Lit" Problem.
	Timer has not been set and started	The system will only run when the timer is counting down. Check the timer display on the control panel. • If it is not counting down, press the ⏻ button. • If the time being displayed is 00:00, then add time and start the system.
	Liquid level is too high or too low	Check the indicator lights on the right side of the display control panel. If either level indicator is on, add or remove water from the tank until the indicator turns off. Press the ⏻ button to restart. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN ADDING OR REMOVING LIQUID FROM THE TANK.

Problem	Probable Causes	What to Do
	Liquid temperature is too high Error Code: EO = over temperature	Check the indicator lights on the right side of the display control panel. If the Alert light is on, open the lid and lift the part basket from the tank. Let the liquid cool and try starting the cycle again. If it overheats a second time, contact technical support. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN MANIPULATING THE PART BASKET. NEVER PLACE YOUR FACE NEAR THE TANK WHEN REMOVING THE LID, VAPORS FROM THE CLEANING SOLUTION MAY CAUSE EYE AND RESPIRATORY IRRITATION.
	Over-temperature sensor has tripped	A resettable over temperature sensor located on the back wall of the tank turns off the unit if the temperature of the bath exceeds 95ºC. For instructions on resetting this sensor, contact technical support.
	Pump or Heater have failed	Contact technical support.
Buzzer is going off Silence the buzzer by pressing the button	Liquid level is too high or too low	Check the indicator lights on the right side of the control panel. If either level indicator is on, add or remove water from the tank until the indicators go off. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN ADDING OR REMOVING LIQUID FROM THE TANK.
	Liquid temperature is too high Error Code: EO = over temperature	Check the indicator lights on the right side of the control panel. If the Alert Indicator light is on remove the lid and lift the part basket from the tank. Let the liquid cool and try starting the cycle again. If it overheats a second time, contact technical support. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN MANIPULATING THE PART BASKET. NEVER PLACE YOUR FACE NEAR THE TANK WHEN REMOVING THE LID, VAPORS FROM THE CLEANING SOLUTION MAY CAUSE EYE AND RESPIRATORY IRRITATION.
	Sensor failure, power supply failure, or pump failure. Error Codes: ES = Vcc out of range, power supply error	If the Alert Indicator light is also illuminated this is indicative of one of several types of failures. Contact technical support.

Problem	Probable Causes	What to Do
	EO = over temperature r1 = temperature sensor failure r2 = High level sensor failure r3 = Low level sensor failure	
	Basket is raised or lowered too quickly	If the basket is lowered into or raised out of the cleaning solution too quickly, the solution does not fill or empty out fast enough to maintain even water level throughout the tank. This causes a temporary high or low water level condition. The Alert indication will go off once the water level reaches acceptable limits but the unit will not operate again until the ⏻ button is pushed.
Flow in tank appears less than normal	Nozzle is clogged	Remove the nozzle and clean with water. If necessary, clean holes in nozzle with wire brush or small pin. Verify that all nozzle holes are clear before replacing. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN WORKING INSIDE THE TANK OR HANDLING COMPONENTS THAT ARE COVERED IN CLEANING SOLUTION.
	Pump intake screen is clogged	Drain the tank as instructed in the section “Maintaining your SCA”. Clean the intake screen with a toothbrush until debris is removed from the holes. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN WORKING INSIDE THE TANK OR HANDLING COMPONENTS THAT ARE COVERED IN CLEANING SOLUTION.
Flow from nozzle is not uniform	Nozzle is clogged	Remove the nozzle and clean with water. If necessary, clean holes in nozzle with wire brush or small pin. Verify that all nozzle holes are clear before replacing. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN WORKING INSIDE THE TANK OR HANDLING COMPONENTS THAT ARE COVERED IN CLEANING SOLUTION.
White deposits noticeable on dark-colored parts	The white-colored support material may have saturated the cleaning solution.	Drain the tank and add fresh water and cleaning solution as described in the “Operating your SCA” portion of this manual. Re-clean the parts using the fresh cleaning solution.
The cleaning solution has a strong odor	The cleaning solution is likely saturated with support material.	Drain the tank and add fresh water and cleaning solution as described in the “Operating your SCA” portion of this manual.

Problem	Probable Causes	What to Do
After several hours parts don't appear to be much cleaner	The cleaning solution is likely saturated with support material.	Drain the tank and add fresh water and cleaning solution.
	Type of cleaning agent.	If using EcoWorks, try switching to WaterWorks. Both are sold by Stratasys resellers. WaterWorks is a more efficient cleaning concentrate.
Liquid Level indicators did not turn off when liquid was added/removed from the tank	Sensors or Indicators have failed	Contact technical support
System is draining slowly	Drain strainer is clogged	While wearing gloves, reach into the water and remove any large pieces of debris from the drain strainer. If necessary, clean the drain strainer with a toothbrush without removing the strainer. ALWAYS WEAR PROTECTIVE GLOVES AND EYEWEAR WHEN WORKING INSIDE THE TANK. Resume draining. Do not drain without the strainer.

11: Technical Specifications

Item	Specification	
Model Number	**SCA-1200HT**	
Power Cord	110 North American	220 International
Power Requirements	100-120V~ 50/60 Hz 12A	220-240V~ 50/60 Hz 9A
Main Supply Voltage Fluctuation	up to +/- 10%	
Transient Overvoltage	2500V	
Electrical Protection	15A/250VAC Fuse	
Heater Power	1,200 Watts	1,700 Watts
Regulatory Compliance	CE / UL / CSA / RoHS / WEEE	
Tank Capacity	12.2 Gallons / 46.3 Liters	
Physical Dimensions	26L x 17.5W x 20.5H inches / 66 x 44.5 x 52 cm	
Shipping Package Dimensions	29.5 x 21.8 x 24.8 inches / 75.0 x 55.4 x 63.0 cm	
Weight, Shipping Max	NW: 64 lbs / 29 kg GW: 75 lbs / 34 kg	
Large Parts Basket Capacity	10 x 10 x 12 inches / 25 x 25 x 30 cm	
Small Parts Basket Capacity	4 x 4 x 4 inches / 10 x 10 x 10 cm	
Allowable Liquid Solution Temperature	10ºC - 85ºC	
Operating Environment Ranges	Temperature: 5ºC - 40ºC Humidity: 0% - 80% RH Altitude: 0 M – 2000 M	
Temperature Control Accuracy	± 2ºC	
Pump Max Flow Rate	10 GPM / 38 LPM	
Temperature Display	Digital LED Readout	
Timer Display	Digital LED Readout	
Liquid Level Checking	Fixed liquid level sensors with separate lamp indicators for high and low level and audible alarm for both.	
Temperature Checking	Over temperature sensor, alerts at 5°C above the set temperature, audible alarm and lamp indicator. Thermal cutoff factory set at 90°C.	
Pump and Heater Safety Lockouts	Low liquid level, high liquid level, over temperature, no time on timer.	
Tank Construction	Deep Drawn Stainless Steel	
Ventilation Requirements	Must be operated in a well-ventilated space	
Required Protective Equipment	Thermal Gloves Safety Glasses	
Measurement (Installation) Category:	Installation Category II	
Pollution Degree	2	
Protection Class	Class I	
Marked Degree of protection for IEC	For Indoor Use Only	

Specifications are subject to change without notice.

12: Technical Support

Technical support for this product is provided by Phoenix Analysis & Design Technologies, Inc. (PADT). Before contacting technical support please do the following:

1. Try the Troubleshooting table in this manual.
2. Visit **www.SupportRemoval.com/support** and try the troubleshooting found there.
3. Write down your model number, part number, and serial number (found on the back of the unit).

If the unit is under warranty or covered by a maintenance contract, contact the Authorized Reseller from whom the unit was purchased.

Otherwise, to receive technical support, visit **www.SupportRemoval.com/Resources** and proceed to the "Request Technical Support" page and fill out the support request form there.

If you prefer to e-mail, you can send an e-mail to: sca@padtinc.com. Please include your full name, company name, phone number and product serial number in all e-mails.

If you prefer to call, dial: 1-800-293-PADT and ask for SCA technical support.

12.1: Replacement Parts

Send email to sca@padtinc.com or call 1-800-293-PADT for information on obtaining replacement parts.